



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D119-796-241
Job Sheet 169273-C



Part No: D119-796-241

Job Qty: 1 ea

Part Name: Aft Crosstube Installation Without Step (No Hardware)



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 12/6/17

Job Tracking No:

Created By: Marie Lajeunesse

Due Date: 12/15/17

Type: Stock

Description:

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	12/12/17	12/12/17	0.00	0.00	Start Up Crosstubes-1		DP2
120	Packaging	1 pcs	12/12/17	12/12/17	0.00	0.00	Packaging1-1		SP
130	CNC Bend Crosstubes	1 pcs	12/12/17	12/12/17	4.67	4.17	CNC Bend Crosstube		GP / DP2
140	QC	1 pcs	12/12/17	12/12/17	0.00	0.00	QC15		TA
145	Crosstubes	1 pcs	12/12/17	12/12/17	0.00	3.30	Crosstubes-1		GP / DP2
150	Crosstubes	1 pcs	12/12/17	12/12/17	0.00	3.30	Crosstubes-1		GP / DP2
160	HandFXtube	1 pcs	12/13/17	12/13/17	0.00	1.28	HandFinish5		GP / DP2
170	QC	1 pcs	12/13/17	12/13/17	0.00	0.00	QC7-1		38 DAS
175	QC	1 pcs	12/13/17	12/13/17	0.00	0.00	QC5		38
180	Outsource	1 pcs	12/14/17				SKY002-VC	2	18-12-17
190	Packaging	1 pcs	12/14/17	12/14/17	0.00	0.00	Packaging2		18-12-17
200	QC	1 pcs	12/14/17	12/14/17	0.00	0.00	QC5		38
230	SprayPaint	1 pcs	12/14/17	12/14/17	0.00	1.31	Spray Paint		DEC 16 2017
240	QC	1 pcs	12/14/17	12/14/17	0.00	0.00	QC14		18-1-2
242	Crosstubes	1 pcs	12/14/17	12/14/17	0.00	3.30	Crosstubes-1		18-01-07
244	QC	1 pcs	12/14/17	12/14/17	0.00	0.00	QC5		18-01-10
246	SprayPaint	1 pcs	12/14/17	12/14/17	0.00	1.31	Spray Paint		JAN 15 2018
248	SprayPaint	1 pcs	12/14/17	12/14/17	0.00	1.31	Spray Paint		JAN 15 2018
250	QC	1 pcs	12/14/17	12/14/17	0.00	0.00	QC14		18-01-10
252	Crosstubes	1 pcs	12/15/17	12/15/17	0.00	3.30	Crosstubes-1		FEB 01 2018
260	QC	1 pcs	12/15/17	12/15/17	0.00	0.00	QC5		FEB 01 2018
270	Packaging	1 pcs	12/15/17	12/15/17	0.00	0.00	Packaging1-1		FEB 01 2018
280	QC	1 pcs	12/15/17	12/15/17	0.00	0.00	QC4		17-10
285	DC	1 pcs	12/15/17	12/15/17	0.00	0.00	DC		FEB 01 2018
290	Packaging	1 pcs	12/15/17	12/15/17	0.00	0.00	Packaging3-1		FEB 01 2018
300	QC21-FG	1 Ea	12/15/17	12/15/17	0.00	0.00	QC21		21 0-00

Part Op 130 - Bend tube as per Dwg D119-796-241 using CNC bender program
Descriptions: 145 - 1- CUT TUBE AT HEIGHT ON FAI SHEET

150 - ***** ENSURE PROPER JIG POSITIONING *****

160 - ***IMMEDIATELY AFTER GRINDING***

180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

190 - Ensure copy of NDT results attached to work order.

200 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D119-796-241

230 - ***VERIFY BY _____ BATCH # TO MATCH W/O Primer 138676

240 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____

242 - Assemble as per dwg D119-796-241 and QSI 2- Install D5152-043 with proseal 890 on concave surface, 0.100" MIN thick as per dwg using DT10112 (identified right and left) 3- Install center support without bonbing. 4- Install Damper support and contact pads using proseal 890 per dwg and clamp in position.

244 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____

246 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____

248 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____

250 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____

252 - 1- Re-install non fixed hardware per dwg ***Torque clamps on damper and contact pad to 80-100 IN-LBS.*** 2- Apply a filet-seal of proseal 890 around damper supports and contact pads.

260 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED AS PER DWG.*** 1- ATTACH A RED TAG TO CENTER SUPPORT THAT READS CENTER SUPPORT NOT FIXED THEN DATE AND STAMP IT.

285 - Photocopy bluefile and create labels as per PPP D119-796-241 chg 004

290 - Identify and pack for shipping as per PPP D119-796-241 on w/o 170330-B

242 - proseal 138708 exp 5/18 start: 18-01-07 finish: 18-01-10

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation 165317	D119-796-241TRN	1	6	0	0
242-Crosstubes	CR3212-4-07 M137951-11	16	410	0	0
	D2873-043 5001319	4	61	0	0
252-Crosstubes	D5122-1 F164915	1	16	0	0
	D5123-1 F153232	6	295	0	0
	D5123-5 F153235	2	228	0	0
	D5134-041 5001176	1	18	0	0
	D5134-042 5001453	1	14	0	0
	D5136-1 F164364	1	13	0	0
	D5136-2 F164161	1	14	0	0
	D5152-043 5022058	2	17	0	0
	D5515-1 3164334	2	24	0	0
	MS21920-25 M138441-169	6	175	0	0
	MS21920-28 M137963-168	2	115	0	0
270-Packaging	AN174-3A 502774	2	84	0	0
	MS21042-4 5016351	2	3	0	0
	NAS1149D0432JFM137454-15	4	732	0	0

Part Specifications

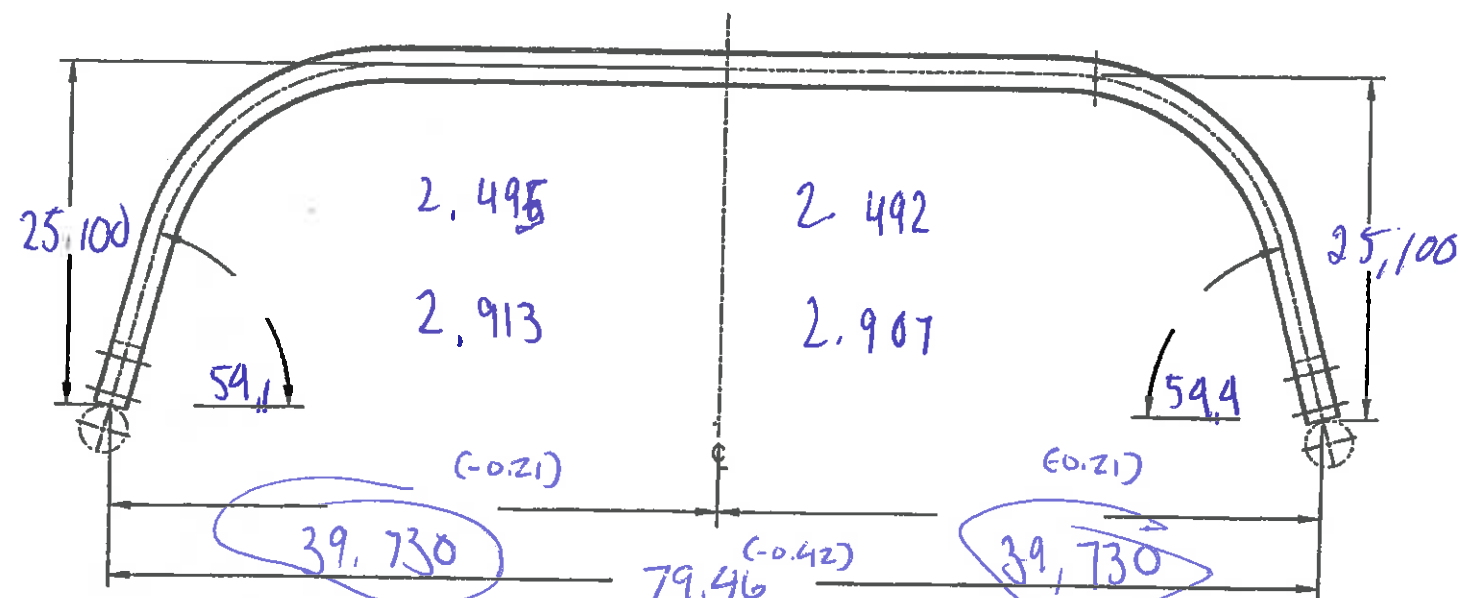
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Crosstube Assembly (AW119 MKII Aft)	5.880Inches ± 0.030	5.910 5.850		
2	Crosstube Assembly (AW119 MKII Aft)	2.516Inches + 0.005 - 0.000	2.521 2.516		
3	Crosstube Assembly (AW119 MKII Aft)	2.626Inches + 0.005 - 0.000	2.631 2.626		
4	Crosstube Assembly (AW119 MKII Aft)	2.627Inches + 0.005 - 0.000	2.632 2.627		
5	Crosstube Assembly (AW119 MKII Aft)	2.798Inches + 0.005 - 0.000	2.803 2.798		
6	Crosstube Assembly (AW119 MKII Aft)	2.799Inches + 0.005 - 0.000	2.804 2.799		
7	Crosstube Assembly (AW119 MKII Aft)	2.989Inches + 0.005 - 0.000	2.994 2.989		
8	Crosstube Assembly (AW119 MKII Aft)	3.191Inches + 0.005 - 0.000	3.196 3.191		
9	Crosstube Assembly (AW119 MKII Aft)	3.200Inches + 0.005 - 0.000	3.205 3.200		
10	Crosstube Assembly (AW119 MKII Aft)	5.880Inches ± 0.030	5.910 5.850		
11	Crosstube Assembly (AW119 MKII Aft)	2.516Inches + 0.005 - 0.000	2.521 2.516		
12	Crosstube Assembly (AW119 MKII Aft)	2.626Inches + 0.005 - 0.000	2.631 2.626		
13	Crosstube Assembly (AW119 MKII Aft)	2.627Inches + 0.005 - 0.000	2.632 2.627		
14	Crosstube Assembly (AW119 MKII Aft)	2.798Inches + 0.005 - 0.000	2.803 2.798		
15	Crosstube Assembly (AW119 MKII Aft)	2.799Inches + 0.005 - 0.000	2.804 2.799		

16	Crosstube Assembly (AW119 MKII Aft)	2.989Inches + 0.005 - 0.000	2.994 2.989
17	Crosstube Assembly (AW119 MKII Aft)	3.191Inches + 0.005 - 0.000	3.196 3.191
18	Crosstube Assembly (AW119 MKII Aft)	3.200Inches + 0.005 - 0.000	3.205 3.200
19	Crosstube Assembly (AW119 MKII Aft)	105.710Inches ± 0.020	105.730 105.690

Plex 12/6/17 8:58 AM Dart.lajeunesse.marie

DART AEROSPACE LTD		Work Order: 169273-C
Description: Crosstube Aft, with Step		Part Number: D119-796-241
Inspection Dwg: D119-796-241	Rev: J	Page 1 of 1

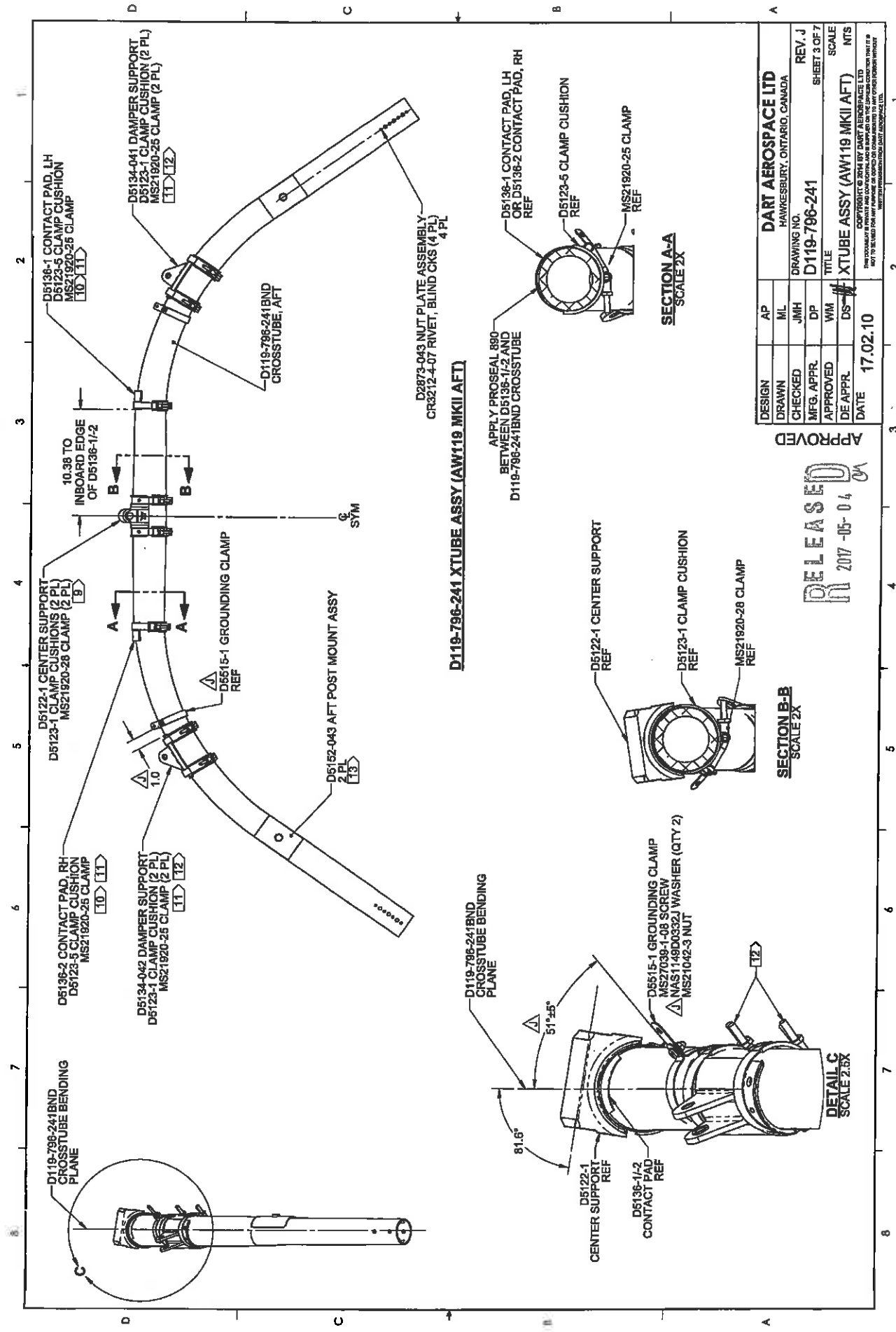
Required Dimension	Min	Max
Height	24.840	25.100
1/2 Span	39.810	40.070
Angle	54°	57°
Total Span	79.620	80.140
Bending Passes	8	--
Crushing	--	8.5%



	Side A	Side B
Bending Passes	12	12
Crushing	7.7%	7.7%
Comments		

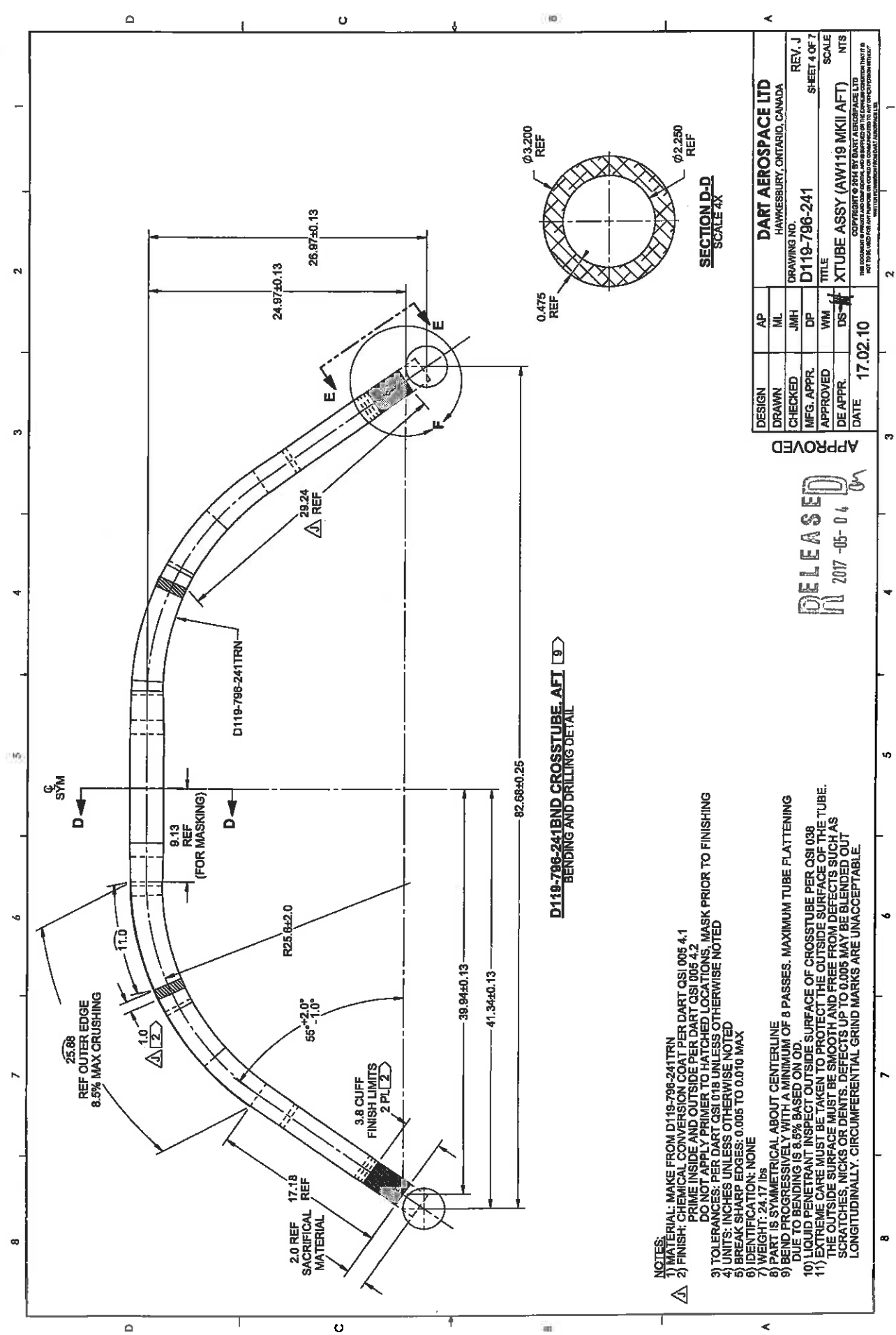
QC15 Inspection	
Date	

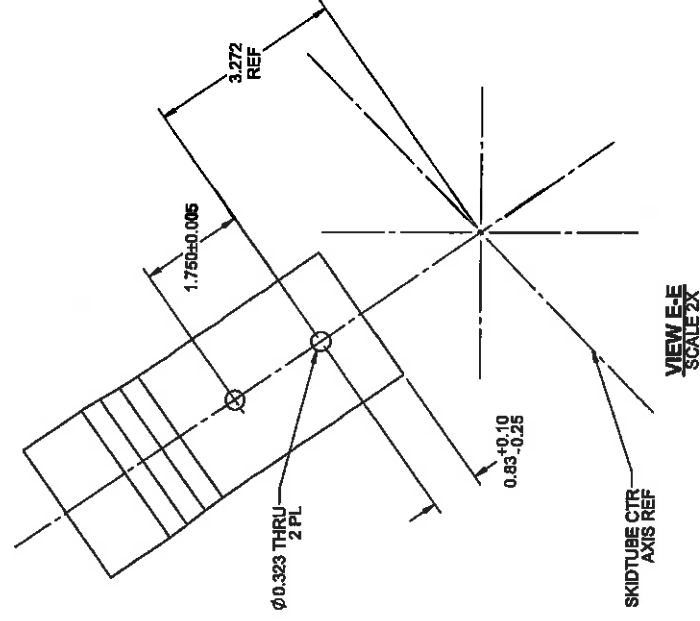
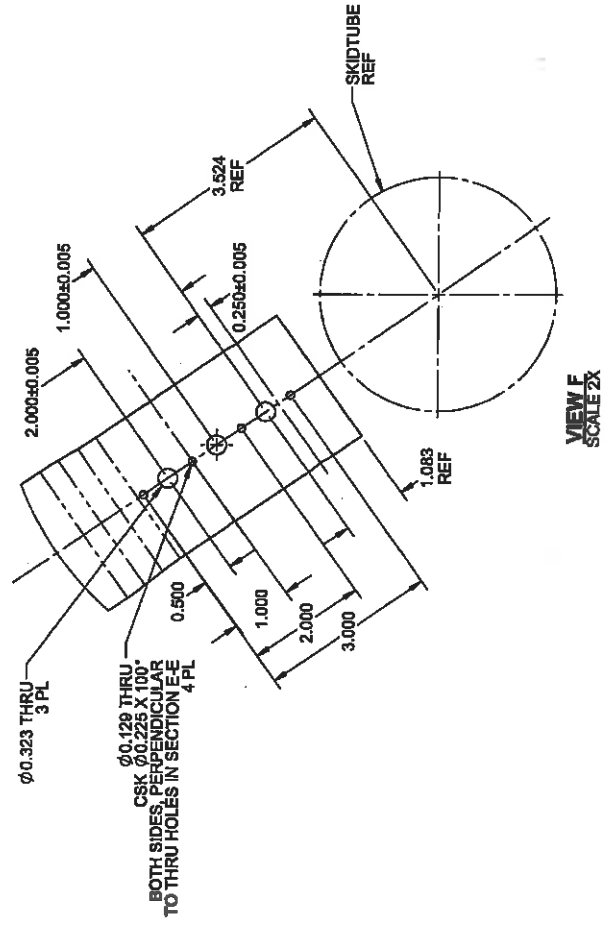
Rev	Date	Change	Revised by	Approved
A	15.04.14	New Issue	KJ	
B	15.11.12	Min angle revised	KJ	
C	15.12.15	Dwg Rev updated	KJ	
D	17.07.12	Dwg Rev updated	KJ	



RECEIVED
2017-05-04
APPROVED

DESIGN	AP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D119-796-241 REV. J SHEET 3 OF 7 SCALE NTS TITLE XTUBE ASSY (AW119 MKII AFT)
DRAWN	ML	
CHECKED	JMH	
MFG. APPR.	DP	
APPROVED	WM	
DE APPR.	DS	
DATE	17.02.10	THIS DOCUMENT IS COPYRIGHT © 2010 BY DART AEROSPACE LTD ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD

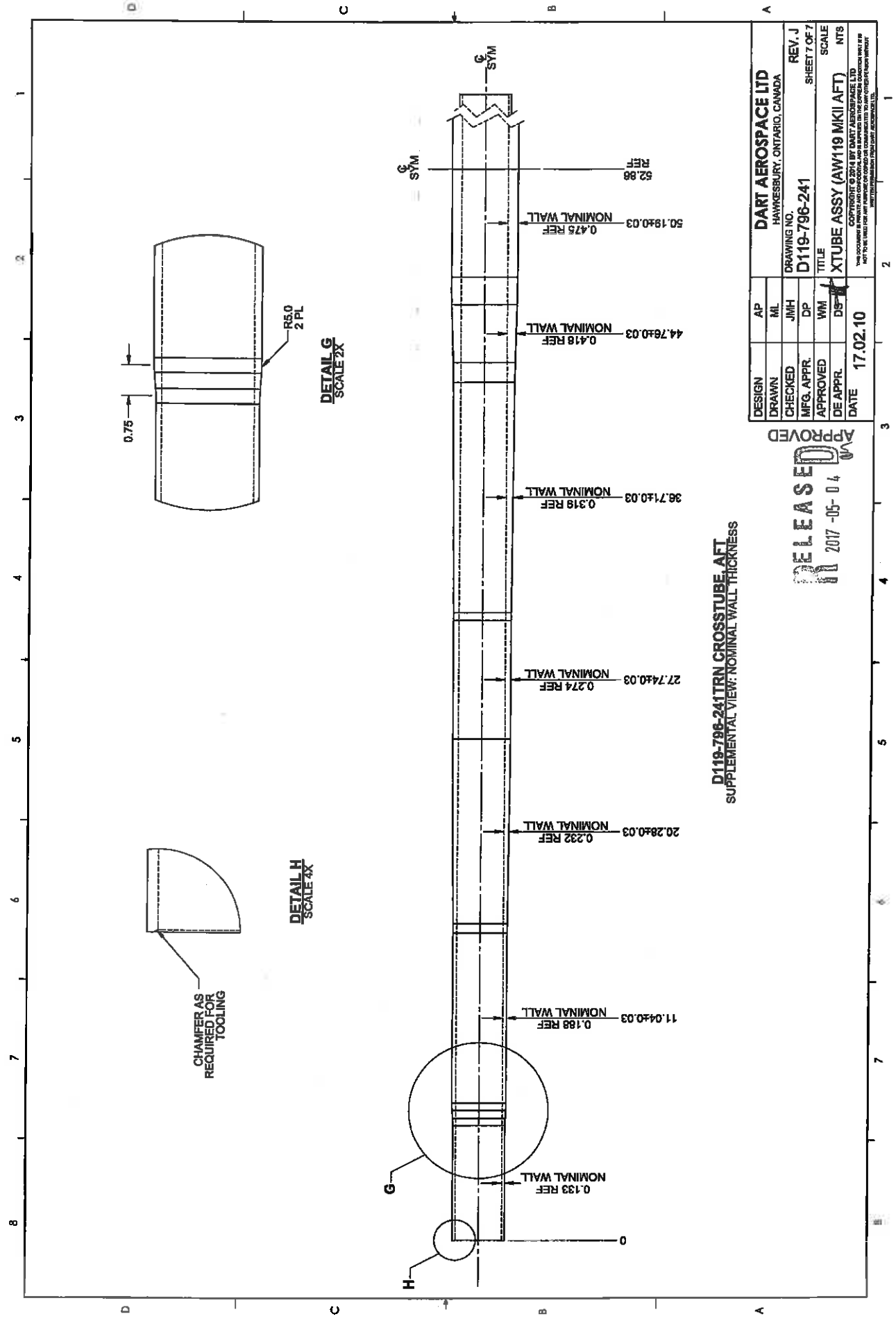




RELEASED
2017-05-04

DESIGN	AP	ML	APPROVED	DATE	17.02.10
DRAWN	AP	ML	DATE	17.02.10	
CHECKED	JMH	DP	DRAWING NO.	D119-798-241	REV. J
MFG. APPR.	WM	DS	TITLE	XTUBE ASSY (AW119 MKII AFT)	SHEET 5 OF 7
DE APPR.	WM	DS	SCALE	NTS	

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D119-798-241TRN CROSSTUBE, AFT
SUPPLEMENTAL VIEW: NOMINAL WALL THICKNESS

DESIGN	AP	ML	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN		JMH	
CHECKED		DP	
MFG. APPR.		WM	
APPROVED		DS	
DE APPR.			
DATE	17.02.10		

RELEASED
2017-05-04
APPROVED

DRAWING NO.	D119-798-241	REV. J
TITLE	XTUBE ASSY (AW119 MKII AFT)	SHEET 7 OF 7
SCALE	NTS	

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skyservice

Work Order Traveler

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO#: MWO34370	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO038658
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON:

1 CLEVIS , P/N# D4806-1 , J/S# 169119

5 FWD CROSSTUBES , P/N# D119-796-141 , J/S# 168122 , 168123 , 169272 , 169272-B , 169272-C

5 AFT CROSSTUBES , P/N# D119-796-241 , J/S# 169273 , 169273-A , 169273-B , 169273-C , 169273-D

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13						DEC 15 2017	
NO CRACK FOUND							
PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , DEV. MPO11715 , UV LIGHT M-20142							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	
		D4806-1					
		38					
		9-86					
		DEC 19 2017					

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp	Date:
Name: RAFIK MELIKIAN		DEC 15 2017



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038671

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO038671

PO Date: 12/18/17

Due Date: 12/18/17

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com

E-MAILED
DEC 18 2017

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items											
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price	
1	169272	D119-796-141	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36	
2	168123	D119-796-141	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36	
3	169272-B	D119-796-141	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36	
4	169272-C	D119-796-141	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36	
5	168122	D119-796-141	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038671

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
6	169273-C	D119-796-241	per ASTM 1417 Level 2 Attach copy of NDT results to work order Aft Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36
7	169273-D	D119-796-241	Aft Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36
8	169273-B	D119-796-241	Aft Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36
9	169273	D119-796-241	Aft Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36
10	169273-A	D119-796-241	Aft Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.36/pcs	\$116.36
11	169119	D4806-1	Clevis Outsource process - NDT per QSI038 4.1 ISSUE P/O C OF C IS REQUIRED	Firmed	12/18/17	1 pcs	0 pcs	1 pcs	\$116.40/pcs	\$116.40
Grand Total:										\$1,280.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Handwritten signature/initials